2017 Annual Report

Guardian Industries, LLC. Consent Decree (Civil No. 15-13426)

Due: March 1, 2018

All capitalized terms not defined in this Annual Report shall have the same meaning as in the Consent Decree.

PARAGRAPH 63

1. ***Status of Guardian's progress toward implementing Section IV:***

Guardian is progressing in orderly manner on implementing the Section IV requirements. A summary of the affirmative actions taken under Section IV in 2017 are as follows:

Carleton Facility Line 1:
Installed CEMS Outlet which was certified on November 14, 2017 in accordance with Consent Decree (CD) requirements.

Carleton Facility Line 2:
Submitted a Title V permit modification application to incorporate all the CD requirements in the Title V permit on December 27, 2016. In August 2017, the facility performed a PSD applicability analysis including air dispersion modeling in 2017 to incorporate the applicable CD NOx 24-hr Block Average limit into the Title V permit.

Corsicana Facility:
Proposed an interim 30-day Rolling Average NOx emission limit to EPA on February 28, 2017 in accordance with CD requirements. The facility has been in compliance with the proposed interim limit since then.

DeWitt Facility:
Installed Control Devices and CEMS Inlet and Outlet as part of its Cold Tank Repair (CTR) in 2017. Due to major commissioning issues which were causing the failure of the PD to operate as required, the facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

Geneva Facility:
A Title V Significant Modification permit was issued on April 11, 2017 for installation of Control Devices and performing a CTR in 2018. The Significant Modification permit approved an increase in production with installation of Control Devices and incorporated all the CD requirements. The facility completed Control Device Startup on August 23, 2017.

Kingsburg Facility:
Submitted a Title V permit modification application to incorporate all the CD requirements in the Title V permit on October 31, 2016. The facility has been working with SJAPCD to incorporate the CD requirements in the Title V permit and has received a draft permit.
Richburg Facility:
Incorporated all applicable CD requirements in its Title V permit which was issued on May 11, 2017 and became effective on January 1, 2018.

2. ***Identification of which facilities will have Control Devices installed by December 31 of 2017 (or, if applicable, will shut down);***

- The Kingsburg Facility was already operating Control Devices prior to the Effective Date of the Consent Decree.
- The Floreffe Facility permanently ceased all processing operations as of August 10, 2015 and complied with the Surrender of Air Permits or Air Permit Conditions on November 23, 2015.
- The Carleton Line 2 Facility started operation of Control Devices on May 28, 2015.
- The Geneva Control Devices Startup completed on August 23, 2017 and therefore, Guardian complied with CD Control Devices installation schedule for 2017 (see Tables 1, 3, and 5 in the CD).
- The DeWitt Control Devices Startup ended on December 15, 2017. Due to major commissioning issues which were causing the failure of the PD to operate as required, the facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

3. **A description of any Section IV Compliance Requirements completed;**

A. *Emission Controls and Limits at the Kingsburg Facility*
7. *Notwithstanding any other requirement or condition in this Consent Decree, Guardian shall comply with all emission limits and requirements in District Rule 4354, as approved by EPA into the California SIP ("SIP-approved District Rule 4354").*

The Kingsburg Facility strives to comply with all requirements of its Title V permit. During the year 2017, deviations to permit conditions related to Rule 4354 occurred. Some of those deviations were related to breakdown conditions of the Control Devices. All deviations were reported on the facility's semi-annual Reports of Required Monitoring, and the facility's Annual Compliance Certification for the compliance period.

B NOX Emission Controls, Limits, and Compliance Schedule:
8. Interim NOX Emission Controls and Limits at the Corsicana Facility.

a. *Installation of High Efficiency Burners. By no later than December 31, 2015, Guardian shall install and continuously operate 24 Global Combustion Burners VitroGLO-SP or equivalent at the Corsicana Facility's Furnace.*

Guardian installed Global Combustion Burners Vitro GLO-SP high efficiency burners at the Corsicana Facility on November 10, 2015 and has been continuously operating the burners since that date.

b. Installation of NO_X CEMS. By no later than December 31, 2015, Guardian shall install, calibrate, certify, maintain, and operate NO_X CEMS in accordance with the requirements specified in Paragraph 26.

A NOx CEMS was installed at the Corsicana Facility and passed the initial Relative Accuracy Test Audit (RATA) on December 9, 2015. The CEMS has been calibrated, maintained and operated in accordance with the requirements specified in Paragraph 26 except during CEMS downtime periods which mainly were periods when the CEMS instrumentation was damaged as a result of lightning strikes in 2015, 2016 and 2017.

c. Interim NO_X Emission Limit. Immediately after installing the high efficiency burners, Guardian will use the high efficiency burners at all times the Furnace is Operating. After installation of the CEMS, Guardian will optimize the high efficiency burners to reduce NO_X emissions. Optimization shall include procedures to evaluate the impact of different burner operating parameters on the emission reduction achieved. After the CEMS is installed and optimization is complete, but by no later than 120 Days after installing the CEMS, Guardian will collect data from the NO_X CEMS for 180 Days. By no later than 60 Days after completing the 180-Day data collection, Guardian will propose to EPA for review and approval separate interim NO_X emission limits for clear and colored glass products for the Corsicana Facility's Furnace in the form of 30-day Rolling Average Emission Rates.

The Corsicana Facility has operated the high efficiency burners at all times since their installation. It has optimized the burners with the installation of the NOx CEMS to reduce the NOx emissions. On April 5, 2016 the burner optimization was completed and the facility started the 180-Day data collection period, which included both clear and ultraclear glass production. The data collection was extended to December 31, 2016. Guardian submitted to the EPA a proposed interim NOx emission limit in the form of 30-day Rolling Average Emission rate for clear glass on February 28, 2017. Please note that Guardian has determined that a separate limit for colored glass production was not necessary.

i. Upon proposing interim NO_X emission limits, Guardian shall continuously comply with the proposed 30-day Rolling Average Emissions Rates. If the EPA disapproves the interim NO_X emission limit(s) proposed by Guardian, EPA shall establish interim NOx emission limit(s) and notify Guardian of the new interim NO_X emission limit(s). Unless Guardian disputes EPA's new interim NO_X emission limit(s) within 30 days of its receipt

of that notice pursuant to the dispute resolution provisions of this Consent Decree, Guardian shall comply with EPA's new interim NO_X emission limit(s) within 45 Days.

Since February 28, 2017, the Corsicana Facility has continuously complied with the proposed 30-day Rolling Average Emissions Rates. To date, the facility has not received a response from EPA regarding the proposed interim limit.

ii. Guardian shall comply with the interim NO_X emission limit established in subparagraph 8.c.i. until the compliance deadlines specified in Table 1 for installing final NO_X emission controls.

The Corsicana Facility has been in compliance with its proposed interim NOx limit of 394 lbs./hr. since February 28, 2017 continuously based on the 30-day Rolling Average Emission Rates.

iii. Guardian will demonstrate compliance with the applicable interim NO_X emission limit continuously using a NO_X CEMS except during Furnace Startup, Canal Maintenance or Abnormally Low Production Rate Days. Guardian may exclude the emissions generated during Furnace Startup, Canal Maintenance or Abnormally Low Production Rate Days from the 30-day Rolling Average Emission Rate. During the Furnace Startup, Canal Maintenance or Abnormally Low Production Rate Day(s) excluded from the 30-day Rolling Average Emission Rate, a NO_X CEMS shall be used to demonstrate the Furnace's compliance with the following pound per Day NO_X limit on a 24-hour Block Average:

The Corsicana Facility did not exclude any day from the 30-day Rolling Average Emission Rate since the interim limit was established on February 28, 2017. The facility did not have any Furnace Startup, Canal Maintenance or Abnormally Low Production Rate Days since the interim limit was established.

9. NO_X Emission Controls Installation Schedule for All Covered Facilities. Guardian shall install SCRs in compliance with this Paragraph on its Furnaces according to the schedule in Table 1. If a Furnace undergoes a Cold Tank Repair prior to a deadline listed in Table 1, it must install a SCR at the time of the Cold Tank Repair. For the Kingsburg Facility, where Guardian is already operating a SCR, Guardian must comply with the conditions of Paragraph 11 by no later than November 30, 2015.

Table 1: NO_X Emission Controls Installation Schedule

Compliance Deadline	*Total number of Furnaces that must have completed installation of a SCR or shutdown in accordance with Paragraph 24.*	*Facility and Furnace*
Effective Date	*1*	*Kingsburg (existing)*

December 31, 2015	*2*	*Kingsburg, and either Floreffe or Carleton Line 2*
December 31, 2016	*3*	*Kingsburg, Floreffe, and Carleton Line 2*
December 31, 2017	*4*	*Kingsburg, Floreffe, Carleton Line 2, and 1 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2018	*5*	*Kingsburg, Floreffe, Carleton Line 2, and 2 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2019	*6*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, and Geneva*
December 31, 2021	*7*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, Geneva, and Richburg*
December 31, 2024	*8*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, Geneva, Richburg, and Corsicana*

A SCR was installed on the Carleton Line 2 Facility Furnace on May 28, 2015. The Floreffe Facility was shut down on August 10, 2015. The Kingsburg Facility had already installed a SCR, and has complied with the conditions of Paragraph 11 since November 30, 2015. A Control Device Startup for the SCR was completed at the Geneva Facility on August 23, 2017 in order to comply with the Table 1 schedule in the CD. In addition, the DeWitt Facility installed a SCR as part of its CTR project in 2017 and completed the Control Device Startup on December 15, 2017. The DeWitt Facility Control Devices have not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force

Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

10. *Final NOx Emission Controls and Limits for All Facilities Except as Provided in Paragraph 11.*
a. NOx Emission Controls.
By no later than the first Operating Day after the deadline in Table 1, Guardian shall Operate each Furnace passing all stack gases (except during Furnace Startup; Control Device Startup; Malfunction of the SCR, DS, or PD; or Maintenance of the SCR, DS, or PD) through a SCR in compliance with the following:
i. SCRs must be designed for a removal efficiency of at least 90 percent; and

In this reporting period, Geneva and DeWitt Facilities installed a SCR. Both SCRs are designed for 90% removal as specified by the equipment manufacturer and described in the contract between Guardian and its Control Device contractor/vendor, [redacted]

ii. *While each SCR is operating, Guardian shall continuously operate the SCR in accordance with good air pollution control practice for minimizing emissions to the extent practicable, SCR consistent with 40 C.F.R. § 60.11(d), taking into consideration Ammonia Slip.*

For this reporting period, this paragraph is applicable to Kingsburg, Carleton Line 2, Geneva and DeWitt Facilities. At the Kingsburg, Carleton Line 2 and Geneva Facilities, the SCR has been in operation continuously in accordance with good air pollution control practice for minimizing emissions to the extent practicable, consistent with 40 C.F.R. § 60.11(d), except during the Furnace Startup; Control Device Startup; Malfunction of the SCR, DS, or PD; or Maintenance of the SCR, DS, or PD. The DeWitt Facility SCR has not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

b. Final NO_X Emission Limits. Commencing on the first Operating Day after completing the Control Device Startup period (but in no case later than the compliance deadlines in Table 1), Guardian shall comply with an 80% 30-day Rolling Average NO_X Removal Efficiency, except as provided in subparagraph 10.c. Guardian shall demonstrate compliance with the 80% 30-day Rolling Average NOx Removal Efficiency using a NO_X CEMS.

Under the Stipulation of Minor Modifications to the CD filed on October 11, 2017 (Minor Modifications), "*the first Operating Day*" in Paragraph 10.b. was amended to "*the 30th Operating Day*". The Geneva Facility commenced compliance with the 80% 30-day Rolling Average NOx Removal Efficiency on September 16, 2017(the first Operating Day) since the Control Device Startup was completed before Minor

Modifications was filed. Compliance was demonstrated using certified NOx CEMS at SCR Inlet and Outlet, except as provided in subparagraph 10.c.. The DeWitt Facility completed the Control Devices Startup and CEMS Certification on December 24th (after the Minor Modifications was filed). Accordingly, the date by which the DeWitt Facility must demonstrate compliance with the 30-day Rolling Average NOx Removal Efficiency is January 22, 2018 which is not within this reporting period.

c. NO_X Limit During Furnace Startup, Control Device Startup, Malfunction of the SCR, DS, or PD, and Maintenance of the Canals, SCR, DS, or PD.

i. *NO_X Limit During Furnace Startup. For no more than the 30 Days allowed for Furnace Startup, the Furnace exhaust may bypass the SCR to avoid having the operating inlet temperature of the SCR fall below its operational range. During these bypass Days Guardian shall burn no more than five (5) million standard cubic feet of natural gas in that Furnace per Day. When technically feasible and available, Guardian will operate the SCR on the Furnace exhaust.*

The DeWitt Facility completed a CTR in 2017. The DeWitt CTR commenced on March 2, 2017. The Furnace began heating up on May 11, 2017. The full cycle of the Furnace Startup as defined in Paragraph 6. aa completed on May 31, 2017. However, one day after glass was pulled from the Furnace on June 3, 2017, the facility was shut down for several months as a result of a fire and explosion. The Furnace began heating up again on October 17, 2017. The Furnace Startup as defined in the amended Paragraph 6.aa of the Minor Modifications, completed on November 15, 2017 and the SCR became operational as the gas temperature reached the minimum acceptable SCR operational temperature. During the SCR bypass period, the DeWitt Furnace burned less than five (5) million standard cubic feet of natural gas per Day.

ii. *NO_X Limit During Control Device Startup or Malfunction of the SCR, DS or PD. For each Operating Day that the SCR does not operate or is not operating normally because of the Control Device Startup or Malfunction of the SCR, DS, or PD for any period of time, Guardian may exclude that Day's. Removal Efficiency from the 30-day Rolling Average NO_X Removal Efficiency. During the Days excluded from the 30-day Rolling Average NO_X Removal Efficiency, a NO_X CEMS shall be used to demonstrate compliance with the following pound per Day NO_X limit on a 24-hour Block Average for each Covered Facility:*

Table 2: NO_X Emission Limits During Days Where the SCR Is Not Operating Pursuant to Subparagraph 10.c. ii.

Facility and Furnace	*$NO_{X\ W/o\ SCR}$ (lb./Day)*
Floreffe	*6,000*
Carleton #1	*6,314*
Carleton #2	*10,433*
Corsicana	*14,400*
Richburg	*10,800*

Geneva	*8,134*
DeWitt	*7,800*
Kingsburg	*8,400*

For this reporting period, this Paragraph is only applicable to the Carleton Line 2, Kingsburg, Geneva, and DeWitt Facilities as shown below:

Facility and Furnace	**Applicable for this reporting period and relevant activities**
Floreffe	NA, Shutdown
Carleton Line1	NA
Carleton Line 2	Yes - Control Device Malfunction
Corsicana	NA
Richburg	NA
Geneva	Yes - Control Device Startup or Malfunction
DeWitt	Yes - Control Device Startup or Malfunction
Kingsburg	Yes - Control Device Malfunction

Carleton Line 2, Kingsburg, Geneva and DeWitt Facilities did not exclude any days from the 30-day Rolling Average NOx Removal Efficiency due to Control Device Malfunction of the SCR, DS, or PD in this reporting period and, therefore, compliance with the facility's specific NOx limit specified in Table 2 on a 24-hour Block Average was not applicable.

iii. NO_X Limit During Maintenance of the Canals, SCR, DS or PD.
For any Operating Day where Maintenance activities on the canals, SCR or DS/PD are performed, Guardian may exclude the Maintenance Day from the 30 day Rolling Average NO_X Removal Efficiency. For any Day which is excluded from the 30-day Rolling Average NO_X Removal Efficiency, a NO_X CEMS shall be used to demonstrate compliance on a 24-hour Block Average with the following pound per Day limit:

$$NO_{X\ SCR\ Maint} = \frac{MH \times NO_{X\ W/o\ SCR}}{24} + \frac{NH \times NO_{W/o\ SCR} \times 0.2}{24}$$

For this reporting period, this Paragraph is only applicable to Carleton Line 2, Kingsburg, Geneva and DeWitt Facilities as specified below.

Facility and Furnace	Applicable for this reporting period and relevant activities
Floreffe	NA, Shutdown
Carleton Line 1	NA
Carleton Line 2	Yes - Control Device Maintenance
Corsicana	NA
Richburg	NA
Geneva	Yes - Control Device Maintenance
DeWitt	Yes - Control Device Maintenance
Kingsburg	Yes - Control Device Maintenance

Carleton Line 2, Geneva and DeWitt Facilities did not exclude any Day from the 30-day Rolling Average NOx Removal Efficiency due to Maintenance activities in this reporting period and therefore, this paragraph is not applicable for this reporting period. Kingsburg Facility excluded one Day from the 30-day Rolling Average NOx Removal Efficiency in this reporting period and used a NOx CEMS to demonstrate compliance with a 24-hour Block Average with the pound per Day limit calculated according to the formula above which has been programmed into the facility's data acquisition system (DAS).

11. Final NO_X Emission Controls and Limits for the Kingsburg Facility.

a. NOx Emission Controls.

By no later than the Effective Date for the Kingsburg Facility, Guardian shall Operate the Furnace (except during start-up as defined by SIP-approved District Rule 4354; or Maintenance of the SCR, DS, or PD) passing all stack gases through the SCR in compliance with the following:

i. *While the SCR is operating, Guardian shall continuously operate the SCR in accordance with good air pollution control practice for minimizing emissions to the extent practicable, consistent with 40 C.F.R. § 60.11(d), taking into consideration Ammonia Slip.*

In this reporting period, the Kingsburg Facility did not have any start-up as defined by SIP-approved District Rule 4354. The Kingsburg Facility SCR has been in operation continuously except during the Maintenance of the SCR, DS, or PD in accordance with good air pollution control practice for minimizing emissions to the extent practicable, consistent with 40 C.F.R. § 60.11(d), taking into consideration Ammonia Slip. Ammonia slip has been monitored.

b. Final NO_X Emission Limits. By no later than November 30, 2015, Guardian shall comply with an 80% 30-day Rolling Average NO_X Removal Efficiency, except as provided in subparagraph 10.c. Guardian shall demonstrate compliance with the 80% 30-day Rolling Average NO_X Removal efficiency using a NO_X CEMS.

The Kingsburg Facility has been in compliance with 80% removal efficiency since October 7, 2015 except as provided in subparagraph 10.c and a period from December 17, 2015 to February 26, 2016 which was discussed in detail in the previous annual report. The Kingsburg Facility has demonstrated compliance with the 80% 30-day Rolling Average NO_X Removal efficiency using a NO_X CEMS.

12. Alternative Compliance Option.
a. If Guardian is able to reduce the 30-day Rolling Average Emission Rate into the SCR to less than 8.0 lb. NO_X per Ton of glass produced for at least 180 consecutive Days of normal Operation (excluding periods that qualify as Maintenance, Malfunction, Furnace Startup, Control Device Startup, or Abnormally Low Production Rate Days), Guardian may notify EPA and the applicable Plaintiff-Intervenor, if any, that it elects to comply with a 30-day Rolling Average Emission Rate of 1.6 lb. NO_X per Ton of glass produced (measured after the SCR) in lieu of the final NO_X emission limit(s) in subparagraph(s) 10.b. and/or 11.b. Guardian shall comply with a 30-day Rolling Average Emission Rate of 1.6 lb. NO_X per Ton of glass produced 60 Days after Guardian provides notice to EPA and the applicable Plaintiff-Intervenor, if any. After electing to comply with the alternative compliance option in this Paragraph, Guardian may not revert to complying with the final NO_X emission limit(s) in subparagraph(s) 10.b. and/or 11.b. If EPA determines that Guardian has not satisfied any of the following criteria, Guardian must continue complying with the applicable final NO_X emission limit(s) in subparagraph(s) 10.b. and/or 11.b.

Guardian did not exercise this option in this reporting period.

b. Guardian's notice must include all 30-day rolling average data for NO_X for the 12-month period prior to the date the notice is submitted. Guardian must clearly identify any Days that it believes are exempted from the 30-day Rolling Average Emission Rate and indicate which exemption applies (i.e., Maintenance, Malfunction, Furnace or Control Device Startup, or Abnormally Low Production Rate Days).

Guardian did not exercise this option in this reporting period.

c. Guardian's notice must identify any equipment that it installed and explain all actions that it took in order to achieve reduced emissions at the Furnace for which it seeks an Alternative Compliance Option. Guardian shall continue to operate any equipment and continue all actions necessary to maintain such emissions reductions. If Guardian is able to reduce the 30-day Rolling Average Emission Rate into the SCR to less than 8.0 lb. NO_X per Ton of glass produced.

Not applicable for this reporting period.

d. Guardian may not elect to comply with an alternative compliance option for a Furnace that has had any exceedances of the Final NO_X Emission Limit(s) required by

subparagraph(s) 10.b. and/or 11.b. within the last twelve (12) months prior to the election allowed by this Paragraph 12.

Not applicable for this reporting period.

e. Guardian must continue to operate the SCR at all times as required in the applicable Paragraph(s) 10 and/or 11 above. However, Guardian may also comply with a NO_X limit for Abnormally Low Production Rate Days, which shall be calculated as follows: Guardian may exclude the NO_X emissions generated from that Furnace during an Abnormally Low Production Rate Day (or Days) from the 30-day Rolling Average Emissions Rate. During these Days, a CEMS shall be used to demonstrate Guardian's compliance on a 24-hour Block Average with the following pound per Day limit:

$$NO_{X\,Abn} = 1.6\frac{lb\ NO_X}{ton} \times \left[\frac{P}{0.35}\right]$$

The Kingsburg, Carleton Line 2, Geneva Facilities operated the SCR at all times as required in the applicable Paragraph(s) 10 and/or 11 above. These facilities did not exclude any Abnormally Low Production Rate Day from the 30-day Rolling Average Emissions Rate. The DeWitt Facility SCR has not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

C. SO_2 Emission Controls, Limits, and Compliance Schedule

13. *SO_2 Emission Control Installation Schedule. Except for the Kingsburg Facility and Floreffe Facility (where Guardian is already operating DSs), by no later than the applicable deadlines in the compliance schedule listed in Table 3, Guardian must install a DS for each Furnace. If a Furnace undergoes a Cold Tank Repair prior to a deadline listed in Table 3, it must install a DS at the time of the Cold Tank Repair.*

Table 3: SO_2 Emission Controls and Compliance Schedule

Compliance Deadline	***Total number of Furnaces that must have completed installation of a DS or shutdown in accordance with Paragraph 24.***	***Facility and Furnace***
Effective Date	*2*	*Kingsburg (existing) and Floreffe (existing)*

December 31, 2016	*3*	*Kingsburg, Floreffe and Carleton Line 2*
December 31, 2017	*4*	*Kingsburg, Floreffe, Carleton Line 2, and 1 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2018	*5*	*Kingsburg, Floreffe, Carleton Line 2, and 2 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2019	*6*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, and Geneva*
December 31, 2021	*7*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, Geneva, and Richburg (convert Semi-Dry Scrubber to DS)*
December 31, 2024	*8*	*Kingsburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, Geneva, Richburg (convert Semi-Dry Scrubber to DS), and Corsicana*

Guardian installed and has operated a DS on the Carleton Line 2 Facility Furnace since May 28, 2015. The Floreffe Facility was shut down in August 2015 and the Kingsburg Facility had installed a DS prior to December 31, 2015. A Control Device Startup for the DS was completed at the Geneva Facility on August 23, 2017 to comply with the Table 3 schedule. In addition, the DeWitt Facility installed a DS as part of its CTR project. The DeWitt Control Devices Startup ended on December 15, 2017. The DeWitt Facility Control Devices have not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

14. *Interim Emission Limit at the Richburg Facility.*
For the Richburg Facility, which is already operating a Semi-Dry Scrubber, Guardian shall comply with an interim emission limit of no more than 30 lb./hr. of SO_2 using the Semi-Dry Scrubber until Guardian installs the SCR or the deadline in Table 3, whichever occurs first.:

Richburg Facility has complied with the interim emission limit of 30 lb./hr. of SO_2 using the Semi-Dry Scrubber since the Effective Date of the Consent Decree, which was January 13, 2016, except as described below. The facility demonstrated compliance using a Sulfur Mass Balance in accordance with its former Title V permit until the CEMS certification on December 23, 2016 in accordance with Paragraph 26. The facility began to demonstrate compliance with the interim emission limit of 30 lb./hr. using CEMS based on the 30-day Rolling Averages since December 24, 2016. The CD doesn't specify an averaging period for the interim limit and therefore, consistent with averaging period for other CD emission limits, Guardian considers the averaging period to be 30-day Rolling Averages.

15. *Final SO_2 Emission Controls and Limits for All Facilities Except Kingsburg.*
a. SO_2 Emission Controls.
By no later than the Effective Date for the Floreffe Facility, and the first Operating Day after the deadline in Table 3 for the remaining Covered Facilities, Guardian shall Operate each Furnace passing all stack gases (except during Furnace Startup; Control Device Startup; Malfunction of the DS or PD; or Maintenance of the DS or PD) through a DS.

For this reporting period, this Paragraph is only applicable to Carleton Line 2, Geneva and DeWitt Facilities. The Carleton Line 2 and Geneva Facilities have operated their Furnace passing all stack gases through a DS since the Effective Date requirement in Table 3 except during Furnace Startup; Control Device Startup; Malfunction of the DS or PD; or Maintenance of the DS or PD. The DeWitt Facility Control Devices have not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

b. Final SO_2 Emission Limits.
By no later than December 31, 2015 for the Floreffe Facility and the first Operating Day after the deadline in Table 3 for the remaining Covered Facilities, Guardian shall not exceed a 30-day Rolling Average Emission Rate of 1.2 lb. SO_2 per Ton of glass produced, except as provided in subparagraph 15.c. Guardian shall demonstrate compliance with the 30-day Rolling Average Emission Rate using a SO_2 CEMS.

For this reporting period, this Paragraph is applicable to Carleton Line 2 and Geneva Facilities. The Floreffe Facility was shut down in August 2015. Under Minor Modifications filed on October 11, 2017, *"the first Operating Day"* in Paragraph 15.b. was amended to *"the 30th Operating Day"*. The Geneva Facility commenced compliance with the 30-day Rolling Average SO_2 Emission Rate on September 9, 2017. Neither the Carleton Line 2 nor Geneva Facilities exceeded the 30-day Rolling Average Emission Rate limit of 1.2 lb. SO_2 per ton of glass produced at any time during this reporting period except as provided in subparagraph 15.c. The Carleton Line 2 and Geneva

Facilities demonstrated-compliance with the 30-day Rolling Average Emission Rate using a SO_2 CEMS. The DeWitt Facility completed the Control Devices Startup and CEMS Certification on December 24th (after modifications filed). Accordingly, the date by which the DeWitt Facility must demonstrate compliance with the 30-day Rolling Average NOx Removal Efficiency is January 22, 2018 which is not within this reporting period.

c. SO2 Limit During Furnace Startup, Control Device Startup, Malfunction of the DS or PD, Maintenance of the DS or PD, and Abnormally Low Production Rate Days.
i. SO2 Limit During Furnace Startup. For no more than the 30 Days allowed for Furnace Startup, Furnace exhaust may bypass the DS to avoid having the operating inlet temperature of the DS fall below its operational range. During the Days that Furnace exhaust bypasses the DS, Guardian shall burn no more than five (5) million standard cubic feet of natural gas in that Furnace per Day. When technically feasible and available, Guardian will operate the DS on the Furnace exhaust.

The DeWitt Facility completed a CTR in 2017. The DeWitt CTR commenced on March 2, 2017. The Furnace began heating up on May 11, 2017. The full cycle of the Furnace Startup as defined in Paragraph 6. aa completed on May 31, 2017. However, one day after glass was pulled from the Furnace on June 3, 2017, the facility was shut down as a result of a fire and explosion. The Furnace began heating up again on October 17, 2017. The Furnace Startup, as defined in the amended Paragraph 6. aa of the Minor Modifications, was completed on November 15, 2017 and the DS became operational as the gas temperature reached the DS operational temperature. During the DS bypass period, the DeWitt Furnace burned less than five (5) million standard cubic feet of natural gas per Day. DeWitt Facility has operated the DS on the Furnace exhaust when technically feasible and available. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

ii. SO_2 Limit During Control Device Startup or Malfunction of DS or PD. For any Operating Day during Control Device Startup or on which a Malfunction of the DS or PD occurs, Guardian may exclude the emissions generated during that Operating Day (or Days) from all Furnaces connected to that DS or PD from the 30-day Rolling Average Emission Rate. During the Day(s) excluded from the 30-day Rolling Average Emission Rate, a CEMS shall be used to demonstrate Guardian's compliance with the following pound per Day SO_2 limit on a 24-hour Block Average:

Table 4: SO_2 Emission Limits During Days Excluded Pursuant to Subparagraph 15.c.

Facility and Furnace	*SO_2 W/o DS (lb./Day)*
Floreffe	*1,984*

Carleton #1	*3,095*
Carleton #2	*3,224*
Corsicana	*3,095*
Richburg	*3,819*
Geneva	*3,472*
DeWitt	*3,472*

For this reporting period, this Paragraph is only applicable to the Carleton Line 2, Geneva and DeWitt Facilities. There was no exclusion from the 30-day Rolling Average SO_2 Emission Rate due to Control Device Malfunction of the DS, or PD in this reporting period and therefore compliance with the facility's specific SO_2 limit specified in Table 4 on a 24-hour Block Average was not applicable.

iii.SO_2 Limit During Maintenance of the DS or PD. For any Operating Day when Maintenance is performed on the DS or PD, Guardian may exclude the emissions generated during that Operating Day (or Days) from that Furnace from the 30-day Rolling Average Emission Rate. During the Day(s) excluded from the 30-day Rolling Average Emission Rate, a CEMS shall be used to demonstrate Guardian's compliance with the following pound per Day SO_2 limit on a 24-hour Block Average formula.

$$SO_{2\ Scrub\ Maint} = \frac{MH \times SO_{2\ w/o\ DS}}{24} + \frac{NH \times [1.2 \times \left[\frac{P}{0.35}\right]]}{24}$$

For this reporting period, this paragraph is only applicable to the Carleton Line 2, Geneva and DeWitt Facilities. Carleton Line 2 and DeWitt Facilities did not exclude any Operating Day from the 30-day Rolling Average Emission Rate due to DS or PD Maintenance activities. The Geneva Facility excluded two Operating Days from the 30-day Rolling Average Emission Rate. A CEMS was used to demonstrate Geneva Facility's compliance with the pound per Day SO_2 limit on a 24-hour Block Average per the above formula.

iv. SO_2 Limit During Abnormally Low Production Rate Days. When any Covered Furnace is Operating at an Abnormally Low Production Rate, Guardian may exclude the SO_2 emissions generated from that Furnace during that Operating Day (or Days) from the 30-day Rolling Average Emissions Rate. During the Days excluded from the 30-day Rolling Average Emissions Rate, a SO_2 CEMS shall be used to demonstrate Guardian's compliance with the following pound per Day SO_2 limit on a 24-hour Block Average:

$$SO_{2\ Abn} = 1.2\frac{lb\ SO_2}{ton} \times \left[\frac{P}{0.35}\right]$$

Where: SO_2 Abn= SO_2 emission limit (in pounds per Day) for a Furnace during Days when an Abnormally Low Production

Rate is occurring.
P = Sum of the Furnace-specific production thresholds as defined in Table 7, in Tons of glass produced per Day.

For this reporting period, this Paragraph is only applicable to the Carleton Line 2, Geneva and DeWitt Facilities. No Abnormally Low Production Rate Day occurred for the Carleton Line 2, Geneva or DeWitt Facilities in this reporting period.

16 Final SO_2 Emission Controls and Limits for the Kingsburg Facility.
a. SO_2 Emission Controls.
By no later than the Effective Date for the Kingsburg Facility, Guardian must Operate the Furnace passing all stack gases (except during start-up as defined by SIP approved District Rule 4354; or Maintenance of the DS or PD) through a DS.

In this reporting period, the Kingsburg Facility did not have any start-up as defined by SIP-approved District Rule 4354. Since October 7, 2015, the Kingsburg Facility has operated the Furnace passing all stack gases through the DS except during Maintenance of the DS or PD.

b. Final SO_2 Emission Limits. Guardian shall not exceed a 30-day Rolling Average Emission Rate of 1.2 lb. SO_2 per Ton of glass produced except as provided in subparagraphs 16.b.i-iii. Guardian shall demonstrate compliance with the 30-day Rolling Average Emission Rate using an SO_2 CEMS.

During this reporting period, the Kingsburg Facility did not exceed the 1.2 SO_2 lb. per Ton of glass produced based on the 30-day Rolling Average Emission Rate except as provided in subparagraphs 16.b.i-iii. A SO_2 CEMS was used to demonstrate compliance.

i. *SO_2 Limit During Start-up as Defined by SIP-approved District Rule 4354. Guardian shall comply with the requirements in SIP-approved District Rule 4354 during start-up as defined by SIP-approved District Rule 4354.*

This paragraph is not applicable for this reporting period since the Kingsburg Facility did not have any start-up as defined by SIP-approved District Rule 4354 during this period.

ii. *SO_2 Limit During Maintenance of the DS or PD. For any Operating Day where Maintenance activities on DS or PD are performed, Guardian may exclude the Maintenance Day from the 30-day Rolling Average Emission Rate. For any Day which is excluded from the 30-day Rolling Average Emission Rate, a SO_2 CEMS shall be used to demonstrate compliance on a 24hour Block Average with the following pound per Day limit:*

$$SO_{2\ K\ Scrub\ Maint} = \frac{MH \times 3472}{24} + \frac{NH \times 1190}{24}$$

Where: $SO_{2\ KDSMaint}$ = SO_2 emission limit for the Kingsburg Furnace during a DS Maintenance Day, in pounds per Day
MH = Hours of Maintenance
NH = Normal Hours = 24 – MH

The Kingsburg Facility was in compliance with its 24-hour Block Average Emission Rate limit on any Operating Day where Maintenance activities on DS or PD were performed and that Operating Day was excluded from the 30-day Rolling Average Emission Rate for this reporting period. For any Day excluded from the 30-day Rolling Average Emission Rate, a SO_2 CEMS was used to demonstrate compliance.

iii. *SO_2 Limit During Idling. During Idling, Guardian may exclude the SO_2 emissions generated from that Furnace during that Operating Day (or Days) from the 30-day Rolling Average Emissions Rate for the Kingsburg Facility. During the Days excluded from the 30-day Rolling Average Emissions Rate, a SO_2 CEMS shall be used to demonstrate Guardian's compliance with an 1,190 pounds per Day SO_2 limit.*

In this reporting period, the Kingsburg Facility did not exclude any SO_2 emissions generated during the Operating Day during Idling from the 30-day Rolling Average Emissions Rate.

D. Increased Production Capacity

17. *If increased production capacity at a Furnace is authorized by a revised Permit limit, the applicable pound per Day limit(s) established in Paragraphs 10, 15, and/or 16 will be increased using the CD formula:*
*New pound per Day limit = original pound per Day limit * CODnew/CODold*

Pursuant to the Iowa Department of Natural Resources (IDNR) Permit Number 95-A-154-P4 issued on July 28, 2016 for the DeWitt Facility CTR project and New York State Department of Environmental Conservation (DEC) Title V Significant Modification Permit Number 8-3205-00041/00013 issued on April 11, 2017 for Geneva Facility CTR project, increases in production capacities were authorized for both facilities and the applicable pound per Day limits established in Paragraphs 10, 15, and/or 16 were increased according to the CD formula above as provided below.

Facility	**SO_2 W/o DS (lb./Day)**	**NOx W/o DS (lb./Day)**
Geneva Facility	3662	8580
DeWitt Facility	3720	8357

E. PM Emission Controls, Limits, and Compliance Schedules

18. *Except for the Kingsburg Facility, Floreffe Facility, and Richburg Facility (where Guardian already operates Particulate Devices), by no later than the applicable deadlines in Table 5, Guardian must install a PD for each Furnace. If a Furnace*

undergoes a Cold Tank Repair prior to a deadline listed in Table 5, Guardian must install and begin operating a PD at the time of the Cold Tank Repair.

Table 5: PM Emission Controls and Compliance Schedule

Compliance Deadline	*Total number of Furnaces that must have completed installation of a PD or shutdown in accordance with Paragraph 24.*	*Facility and Furnace*
Effective Date	*3*	*Kingsburg (existing), Richburg (existing), and Floreffe (existing)*
December 31, 2016	*4*	*Kingsburg, Richburg, Floreffe, and Carleton Line 2*
December 31, 2017	*5*	*Kingsburg, Richburg, Floreffe, Carleton Line 2, and 1 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2018	*6*	*Kingsburg, Richburg, Floreffe, Carleton Line 2, and 2 of the following Furnaces: Carleton Line 1, DeWitt, or Geneva*
December 31, 2019	*7*	*Kingsburg, Richburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, and Geneva*
December 31, 2024	*8*	*Kingsburg, Richburg, Floreffe, Carleton Line 2, Carleton Line 1, DeWitt, Geneva, and Corsicana*

Guardian installed and has operated a PD on Carleton Line 2 Facility since May 28, 2015. A PD Startup was completed at Geneva Facility on August 23, 2017 to comply with the Table 5 schedule. In addition, DeWitt Facility installed a PD as part of its CTR project and completed the Startup on December 15, 2017. The DeWitt Facility Control Devices have not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information. The Floreffe Facility was shut down in August 2015. Both the Kingsburg and Richburg Facilities had installed a PD prior to the Effective Date of January 13, 2016.

19. *Final PM Emission Controls and Limits for All Facilities Except Kingsburg:*
a. PM Emission Controls.

By no later than the Effective Date for the Floreffe and Richburg Facilities, and the first Operating Day after the deadline in Table 5 for the remaining facilities, Guardian shall Operate each Furnace passing all stack gases (except during Furnace Startup; Control Device Startup; Malfunction of the PD; or Maintenance of the PD) through a PD.

The Floreffe Facility was shut down on August 10, 2015. The Richburg Facility operated its Furnace passing all stack gases through a PD since the CD Effective Date of January 13, 2016 except during Malfunction and Maintenance of the PD. The Carleton Line 2 Facility operated its Furnace passing all stack gases through a PD since May 28, 2015 except during Furnace Startup, Control Device Startup, Malfunction and Maintenance of the PD. A PD was installed on Geneva Facility Furnace to comply with the PD installation schedule in the CD (see Table 5 in the CD). Geneva Facility Control Device Startup for the PD was completed on August 23, 2017 in accordance with Table 5 requirements.

The Geneva Facility operated the Furnace passing all stack gases through a PD except during Furnace Startup, Control Device Startup, Malfunction and Maintenance of the PD. In addition, the DeWitt Facility installed a PD as part of its CTR project. The DeWitt Facility Control Device Startup for the PD was completed on November 15, 2017. The DeWitt PD has not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

b. Final PM Emission Limit.
Guardian shall not exceed a limit of 0.45 lb. of PM per Ton of glass produced.

For this reporting period, this paragraph is only applicable to the Carleton Line 2, Richburg, and Geneva Facilities. These facilities did not exceed the limit of 0.45 pounds of PM per Ton of glass produced during this reporting period and demonstrated compliance with the limit through the 2017 annual compliance stack testing for the Carleton Line 2 and Richburg Facilities and the initial stack test for the Geneva Facility. Since the DeWitt Facility completed a CTR, Control Devices were installed and Control Device Startup ended December 15, 2017. Therefore, the initial stack test must be conducted by June 13, 2018, 180 days after the Control Device Startup period ended. Further, due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

20. *Final PM Emission Controls and Limits for the Kingsburg Facility:*

a. PM Emission Controls.
By no later than the Effective Date, Guardian shall Operate the Kingsburg Furnace passing all stack gases (except during Startup as defined by District Rule 4354; or Maintenance of the PD) through a PD.

The Kingsburg Facility has passed all furnace stack gases through the PD since October 7, 2015 except during Malfunction and Maintenance of the PD. Kingsburg Facility did not have any Startup as defined by District Rule 4354 in this reporting period.

b. Final PM Emission Limit.
Guardian shall not exceed a limit of 0.45 lb. of PM per Ton of glass produced.

The Kingsburg Facility demonstrated compliance with the limit of 0.45 pounds of PM per Ton of glass produced through the 2017 June and December annual stack testing using EPA Test Method 5 (40 C.F.R. Part 60, Appendix A-3).

21. *Compliance with the PM emission limits at all Covered Facilities shall be demonstrated through annual stack tests and using EPA Test Method 5 (40 C.F.R. Part 60, Appendix A-3). Guardian shall conduct an initial stack test on each Furnace by no later than 180 Days after the applicable compliance deadline in Table 5 and once each Calendar Year thereafter.*

For this reporting period, this Paragraph is only applicable to Carleton Line 2, Kingsburg, Richburg, and Geneva Facilities as specified below:

Facility and Furnace	**Applicable for this reporting period**
Floreffe	NA, Shutdown
Carleton Line 1	NA
Carleton Line 2	Yes
Corsicana	NA
Richburg	Yes
Geneva	Yes
DeWitt	No- Since the DeWitt Facility completed a CTR, Control Devices were installed and Control Device Startup ended December 15, 2017. Therefore, the initial stack test must be conducted by June 13, 2018, 180 days after the Control Device Startup period ended.
Kingsburg	Yes

The Carleton Line 2, Richburg, and Kingsburg Facilities demonstrated compliance with the PM emission limit of 0.45 pound per ton of glass produced for this reporting period through annual stack tests using EPA Test Method 5 (40 C.F.R. Part 60, Appendix A-3).

In September 2017, an initial stack test was conducted at the Geneva Facility which was within 180 Days of the applicable deadline in Table 5 as required by Paragraph 21.

F. H_2SO_4 Controls, Limits, and Compliance Schedules
22. Final H_2SO_4 Controls and Limits.
a. H_2SO_4 Controls. By no later than the first Operating Day after the compliance deadlines in Table 3, Guardian shall Operate each Furnace equipped with a DS passing all stack gases through the DS (except during a Furnace Startup, Control Device Startup, a Malfunction of the DS and PD, and Maintenance of the DS or PD).

For this reporting period, this Paragraph is only applicable to Carleton Line 2, Kingsburg, DeWitt and Geneva Facilities as specified below:

Facility and Furnace	**Applicable for this reporting period**
Floreffe	NA, Shutdown
Carleton #1	NA
Carleton #2	Yes
Corsicana	NA
Richburg	NA
Geneva	Yes
DeWitt	Yes
Kingsburg	Yes

The Carleton Line 2, Kingsburg and Geneva Facilities operated the Furnace passing all stack gases through DS except during Furnace Startup, Control Device Startup, Malfunction or Maintenance of the PD and DS since the Effective Date requirement in Table 3. The DeWitt PD has not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

b. Final H_2SO_4 Limits.
Guardian shall not exceed a H_2SO_4 emission limit of 1.6 lb. of H_2SO_4 per hour.

For this reporting period, this paragraph is only applicable to the Carleton Line 2, Richburg, and Geneva Facilities. These facilities did not exceed the limit of 1.6 lb. of H_2SO_4 per hour during this reporting period and demonstrated compliance with the limit through the 2017 annual compliance stack testing for the Carleton Line 2 and Richburg Facilities and the initial stack test for the Geneva Facility. Since the DeWitt Facility completed a CTR, Control Devices were installed and Control Device Startup ended December 15, 2017. Therefore, the initial stack test must be conducted by June 13, 2018,

180 days after the Control Device Startup period ended. Further, due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices Operation on December 14, 2017. See response in Paragraph 64 for more information.

23. *Compliance with the H_2SO_4 emission limits shall be demonstrated through annual stack tests and using EPA Conditional Test Method CTM 13A or B. Guardian shall conduct an initial stack test on each Furnace by no later than 180 Days after the applicable deadline in Table 3 and once each Calendar Year thereafter.*

For this reporting period, this Paragraph is only applicable to the Carleton Line 2, Kingsburg, and Geneva Facilities as specified below:

Facility and Furnace	Applicable for this reporting period
Floreffe	NA, Shutdown
Carleton Line 1	NA
Carleton Line 2	Yes
Corsicana	NA
Richburg	NA
Geneva	Yes
DeWitt	No- Since the DeWitt Facility completed a CTR, Control Devices were installed and Control Device Startup ended December 15, 2017. Therefore, the initial stack test must be conducted by June 13, 2018, 180 days after the Control Device Startup period ended.
Kingsburg	Yes

Carleton Line 2, and Kingsburg Facilities demonstrated compliance with the emission limit of 1.6 pounds of H_2SO_4 per hour through annual stack testing as a minimum using EPA Conditional Test Method (CTM) 13. CTM 13 was added to the approved test methods in the Minor Modifications filed on October 11, 2017. The Geneva Facility demonstrated compliance with the emission limit of 1.6 pounds of H_2SO_4 per hour using EPA (CTM) 13 and (CTM) 13B through the initial stack test conducted in September 2017, which is within 180 Days of the applicable deadline in Table 3 as required by Paragraph 23.

G. Shutdown of Furnaces

24. *The permanent shutdown of a Furnace at a Covered Facility and the Surrender of Air Permits or Air Permit Conditions for that Furnace will be deemed to satisfy all requirements of Sections IV of this Consent Decree applicable only to that Furnace on and after the later of: (i) the date of the permanent shutdown of the Furnace; or (ii) the date of the Surrender of Air Permits or Air Permit Conditions. If Guardian elects to permanently shut down a Furnace at a Covered Facility, Guardian must provide written*

notice of the proposed permanent shutdown to the United States and applicable Plaintiff-Intervenor in accordance with Section XVI of this Decree (Notices), by (i) no later than the Effective Date with respect to a Furnace that was permanently shut down prior to the Effective Date, or (ii) upon the Surrender of Air Permits or Air Permit Conditions and no later than the compliance deadline in Tables 1, 3, and 5 for any other Furnace. Such notification shall include any written correspondence to the permitting authority relating to the Surrender of Air Permits or Air Permit Conditions for that Furnace.

The Floreffe Facility furnace permanently ceased all processing operations on August 10, 2015. Guardian received a notice of operating permit termination for its Floreffe Facility from the County of Allegheny on November 23, 2015. Guardian submitted a written notification to EPA on December 7, 2016 documenting the notice of shutdown and the local agency confirmation of "Surrender of Air Permits or Air Permit Conditions".

H. CEMS Installation, Calibration, Certification, Maintenance, and Operation

25. For each Furnace listed in Table 6, Guardian shall install, calibrate, certify, maintain, and operate NO_X CEMS (on both the Inlet and Outlet of the DS) and SO_2 CEMS in accordance with the requirements specified in Paragraph 26 by no later than the applicable deadlines specified in Table 6.

TABLE 6: CEMS Compliance Deadlines

Facility and Furnace	***NO_X CEMS Inlet Deadline***	***NO_X CEMS Outlet Deadline***	***SO_2 CEMS Deadline***
Floreffe	*December 31, 2015*	*Existing*	*December 31, 2015*
Carleton #1	*Upon installation of controls under Paragraph 9*	*December 31, 2017*	*December 31, 2017*
Carleton #2	*December 31, 2015*	*December 31, 2015*	*December 31, 2015*
Corsicana	*Upon installation of controls under Paragraph 9*	*December 31, 2015*	*December 31, 2015*
Richburg	*Upon installation of controls under Paragraph 9*	*December 31, 2016*	*December 31, 2016*
Geneva	*Upon installation of controls under Paragraph 9*	*Existing*	*Upon installation of controls under Paragraph 13*

DeWitt	*Upon installation of controls under Paragraph 9*	*December 31, 2017*	*December 31, 2017*
Kingsburg	*October 31, 2015*	*Existing*	*Existing*

The Floreffe Facility Furnace permanently ceased all processing operations on August 10, 2015. Guardian installed, calibrated, certified, maintained, and operated NOx CEMS (on both the Inlet and Outlet of the DS) and SO_2 CEMS in accordance with the requirements specified in Paragraph 26 as shown in the following table:

Facility and Furnace	**NO_X CEMS Inlet Installed and Certified**	**NO_X CEMS Outlet Installed and Certified**	**SO_2 CEMS Outlet Installed and Certified**
Carleton Line 1	NA	November 14, 2017	November 14, 2017
Carleton Line 2	August 26, 2015	August 26, 2015	August 26, 2015
Kingsburg	November 17, 2015	Existing	Existing
Corsicana	NA	December 9, 2015	December 9, 2015
Richburg	NA	December 23, 2016	December 23, 2016
Geneva	September 8, 2017	September 15, 2017(replaced)	September 8, 2017
DeWitt	December 23, 2017	December 23, 2017	December 23, 2017

29. *Good Air Pollution Control Practices. At all times, including during Abnormally Low Production Rate Days, Idling, a Furnace Startup, a Control Device Startup, Malfunction, and Maintenance, Guardian shall maintain and operate all Furnaces, all Control Devices, and any other associated air pollution control equipment in accordance with 40 C.F.R. § 60.11(d).*

Guardian at all times during this reporting period maintained and operated all Furnaces, all Control Devices, and any other associated air pollution control equipment in accordance with 40 C.F.R. § 60.11(d). However, the DeWitt Facility Control Devices have not been operating continuously. Due to major commissioning issues which were causing the failure of the PD to operate as required, the DeWitt Facility filed a Force Majeure notification for the Control Devices operation on December 14, 2017. See response in Paragraph 64 for more information.

30. a. *Maintenance for Control Devices and Canal Changes at the Covered Facilities: Scheduled or Preventive Maintenance on Control Devices. Any Operating hour that is exempted from the applicable 30-day Rolling Average Emission Rate because of Maintenance being performed on a Control Device is subject to the following restrictions and must comply with the following requirements: Scheduled or preventive Maintenance of Control Devices shall occur and shall be completed while the Furnace(s) connected to the Control Device(s) is not Operating, unless the Furnace connected to the Control Device is scheduled to have a Continuous Operating Year. During a Continuous Operating Year, scheduled or preventive Maintenance on the Control Devices may be conducted while the Furnace(s) connected to the Control Device(s) is Operating. All Control Device Maintenance occurring during a Continuous Operating Year must also be performed in accordance with the following requirements:*

i. Maintenance on all add-on Control Devices at each Covered Facility shall not exceed 144 hours total per Calendar Year.

For this reporting period, this requirement is only applicable to Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities. Maintenance[1] on all add-on Control Devices at Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities did not exceed 144 hours total per Calendar Year for this reporting period.

ii. Bypassing a SCR for the purpose of preventive Maintenance shall not exceed 144 hours per Calendar Year. Bypass of the SCR required as a result of bypassing the PD or DS shall count towards the 144 hour limit.

For this reporting period, this requirement is only applicable to Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities. The SCR bypass for the purpose of preventive Maintenance at the Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities did not exceed 144 hours per Calendar Year for this reporting.

iii. Bypassing a PD for the purpose of preventive Maintenance shall not exceed 144 hours per Calendar Year. Furthermore, if a PD is bypassed, the associated DS and SCR must be bypassed as well.

For this reporting period, this requirement is only applicable to Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities. The PD, DS and SCR bypass at Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities for the purpose of preventive Maintenance did not exceed 144 hours per Calendar Year for this reporting period.

iv. Bypassing a DS for the purpose of preventive Maintenance shall not exceed 144 hours per Calendar Year. Bypass of the DS required as a result of bypassing the PD shall count towards the 144 hour limit.

[1]Any Maintenance hour with partial Control Device bypass that was not exempted from the applicable 30-day Rolling Average Emission Rate was not counted toward the 144 hours /year Maintenance limit.

For this reporting period, this requirement is only applicable to Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities. The PD, DS and SCR bypass at Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities for the purpose of preventive Maintenance did not exceed 144 hours per Calendar Year for this reporting period.

b. *Canal Changes. This subparagraph does not apply to the Kingsburg Facility. No more than once every 2 calendar years, Guardian is permitted 96 hours to complete a Canal Change on their downstream equipment. In the event a Canal Change becomes necessary in less than 2 years, Guardian shall notify EPA and the applicable Plaintiff-Intervenor at least 30 days prior to the Canal Change to provide the opportunity for the EPA and the applicable Plaintiff-Intervenor to investigate the necessity of Canal Change and object. During this period, the Furnace will Operate at Abnormally Low Production Rate, good air pollution control practices will be used at all times, the DS and PD (if technologically feasible for the catalyst-impregnated ceramic filter system) must be operated, and the SCR must be operated unless the inlet temperature or flow to the SCR drops to less than 115% of the minimum operating temperature or flow (as defined by the SCR vendor) for 15 consecutive minutes, and then Guardian may discontinue use of the SCR until temperature and flow stabilize at 115% of the recommended minimums.*

Corsicana Facility had a Canal Change from January 10 to January 13 in 2017. The Canal Change was completed in 76 hours. Currently Corsicana Facility is not required to install and operate Control Device under the CD. The Corsicana Facility exercised good air pollution control practices at all times. No other Covered Facilities had a Canal Change during this reporting period.

31. *Source/Stack Testing. All source/stack tests required by the Consent Decree shall be conducted in accordance with the requirements of the specified Test Method and shall be performed under representative Operating conditions or applicable state requirements for the Furnace being tested. Each test shall be comprised of at least three (3) valid one-hour stack test runs. Guardian shall discard any invalid test runs, such as those that are compromised because of sample contamination. If a test run is discarded, Guardian shall replace it with an additional valid test run. Guardian shall report the results of the discarded test runs to EPA and shall provide all information necessary to document why the test run was not valid. Source/stack testing shall not be conducted during Abnormally Low Production Rate Days, Idling, a Furnace Startup, a Control Device Startup, a Malfunction of the Furnace or relevant Control Device, or Maintenance of the Furnace or relevant Control Device*

This requirement is applicable to the Kingsburg, Carleton Line 2, Geneva, Richburg and DeWitt Facilities for this reporting period. Kingsburg, Carleton Line 2, Geneva and Richburg Facilities conducted all source/stack tests required by the CD in accordance with the requirements of the specified Test Method and under representative Operating conditions and the applicable state requirements for each facility (see response to Paragraph 23 for additional clarification regarding H_2SO_4). Each test was comprised of at

least three (3) valid one-hour stack test runs. No invalid test run was encountered. No stack test was required by the CD for the DeWitt Facility since the Control Devices Startup ended December 15, 2017.

Source/stack testing were not conducted during Abnormally Low Production Rate Days, Idling, a Furnace Startup, a Control Device Startup, a Malfunction or Maintenance of the Furnace or relevant Control Device.

I. *Alternative Primary Control Technology (Paragraphs 32 to 38).*

Paragraphs 32 to 38 are not applicable since no Alternative Primary Control Technology for controlling NOx, SO_2, PM, or H_2SO_4 emissions for any of the Covered Facilities was proposed in this reporting period.

J. *Abnormally Low Production Rate Days*

39. *Table 7 lists the threshold values for an Abnormally Low Production Rate Day for each Furnace at a Covered Facility.*

TABLE 7: Abnormally Low Production Rate Day Threshold

Facility and Furnace	***Abnormally Low Production Rate Day Threshold (Tons/day)***
Floreffe	*140*
Carleton #1	*192*
Carleton #2	*228*
Corsicana	*218*
Richburg	*270*
Geneva	*256*
DeWitt	*245*

For this reporting period, the Abnormally Low Production Rate Day Thresholds listed in Table 7 were applicable only to Carleton Line 2, Geneva and DeWitt Facilities. None of these facilities had any Abnormally Low Production Rate Day during this reporting period.

40. *If increased production capacity at a Furnace is authorized by a revised Permit limit, the Abnormally Low Production Rate Day Threshold will be 35 percent of the new permitted production (or design production, where there is no permitted production) as determined on a daily basis.*

The Geneva Facility received an authorization with the DEC Title V Permit Modification issued April 11, 2017 to increase its production capacity with the installation of the Control Devices on August 23, 2017. The Abnormally Low Production Rate Day Threshold was revised to be 35 percent of the newly permitted production on a daily basis.

In July 2016, the DeWitt Facility received a construction permit from IDNR for the CTR and installation of the Control Devices that authorized an increase its production capacity. The Abnormally Low Production Rate Day Threshold was revised to be 35 percent of the newly permitted production on a daily basis.

Facility	Abnormally Low Production Rate Day Threshold (Tons/day)
Geneva	[redacted]
DeWitt	[redacted]

K. Recordkeeping

41. Guardian shall record: 1) the hourly NO_X emissions (ppm) before and after the SCR as calculated using CEMS data; the hourly SO_2 emissions (lb. per hour) as calculated using CEMS data; 2) the daily production rate; and 3) if applicable, the 30-day rolling average emissions (removal efficiency or rate).

This requirement is applicable to Kingsburg, Carleton Line 2, Geneva and DeWitt Facilities for this reporting period. The facilities recorded (1) the hourly NOx emissions (ppm) before and after the SCR as calculated using CEMS data and the hourly SO_2 emissions (lb. per hour) as calculated using CEMS data; (2) the daily production rate and (3) the 30-day Rolling Average Emissions Rate for SO_2 and the 30-day Rolling Average Removal Efficiency for NOx. For items (1) and (2), the data is provided in Table 7 of Appendix A. For item (3), the data is provided in Table 1of Appendix A. The Kingsburg Facility did not report SO_2 lb./hr. for a total of 309 hours due to the stack flow meter failure on November 5, 2017. The replaced flow meter was fully commissioned on November 16, 2017 and passed required certification testing on November 23, 2017.

42. For any Operating Day(s) that Guardian excludes from the relevant 30-day Rolling Average NO_X Removal Efficiency or 30-day Rolling Average NOx or SO_2 Emission Rate, it shall record: 1) the date; 2) the relevant exception pursuant to which Guardian is excluding the emissions generated during that Operating Day (or Days) (i.e. Abnormally Low Production Rate Day, Idling, start-up as defined by SIP-approved District Rule 4354, Furnace Startup, Control Device Startup, Malfunction, or Maintenance); 3) a calculation of the applicable emission limit (in pounds of NO_X and/or SO_2 per Day) according to the equations in 10.c.ii., 10.c.iii., 12.e., 15.c.ii.-iv., and 16.b.; 4) the emissions recorded by the CEMS (in pounds of NO_X and/or SO_2 per Day); and 5) if it was a Malfunction an explanation and any corrective actions taken. For any Operating Day(s) excluded for Maintenance of a Control Device or Furnace, Guardian shall also record the total number of hours during which Maintenance occurred.

This paragraph is applicable to Kingsburg, Carleton Line 2, DeWitt and Geneva Facilities for this reporting period. DeWitt Facility had not commenced compliance with the 30-

day Rolling Average Emission Rate in this reporting period. Carleton Line 2 and DeWitt Facilities did not exclude any days from the relevant 30-day Rolling Average NOx Removal Efficiency or 30-day Rolling Average SO_2 Emission Rate. Kingsburg Facility excluded one Maintenance Day from the relevant 30-day Rolling Average NOx Removal Efficiency. Kingsburg and Geneva Facilities excluded some Maintenance Days from the 30-day Rolling Average SO_2 Emission Rate. Kingsburg and Geneva Facilities recorded (1) the date, (2) the relevant exception pursuant to which Guardian excluded the emissions generated during that Operating Day(s), (3) a calculation of the applicable emission limit calculated according to the applicable equations in 10.c.ii., 10.c.iii., 12.e., 15.c. ii.-iv., and 16.b. and (4) the emissions recorded by the CEMS (in pounds of NOx and/or SO_2 per Day). Kingsburg and Geneva Facilities recorded the total number of hours during which Maintenance of the Control Devices occurred for the Operating Day(s) excluded. This information is provided in Table 8 of Appendix A.

43. *Recordkeeping During Furnace Startup. In addition to the recordkeeping requirements listed above, Guardian must also keep the following records during Furnace Startup.*
a. The amount of salt cake added to the batch materials in pounds per Ton of total batch material (including cullet);
b. The total natural gas usage in that Furnace (in million standard cubic feet);
c. The excess oxygen percentage (as measured and recorded by the oxygen sensor in the crown of each Furnace regenerator at least once per shift); and
d. A description of whether thermal blankets or similar techniques were used during this period.

This paragraph is only applicable to DeWitt Facility for this reporting period. DeWitt Facility completed a CTR in 2017. The DeWitt CTR commenced on March 2, 2017. The Furnace began heating up on May 11, 2017. The full cycle of the Furnace Startup as defined in Paragraph 6. aa completed on May 31, 2017. However, one day after glass was pulled from the Furnace on June 3, 2017, the facility was shut down as a result of a fire and explosion. DeWitt Facility complied with all the reporting requirements under paragraphs 43 and recorded the required data except missing the excess oxygen percentage measurement (43.c.) during the first shift on May 27, 2017 (See Appendix D).

The Furnace began heating up again on October 17, 2017. The Furnace Startup completed on November 15, 2017 once the gas temperature reached the minimum acceptable operational temperature of the SCR. All the data required under paragraphs 43 was recorded during the second Startup. The data recorded during both Startup are provided in Table 9 and Table 10 of Appendix C.

4. ***Any problems encountered or anticipated in implementing Section IV (Compliance Requirements), together with implemented or proposed solutions;***

Richburg Force Majeure and Malfunction Event

Paragraph 14 establishes an interim SO_2 emission limit of 30 lb./hr. for the Richburg Facility as of the Effective Date until the Richburg Control Devices are installed. The CD does not specify an averaging period for the interim limit and, therefore, consistent with the averaging period for other CD emission limits, Guardian considers the averaging period to be 30-day rolling for the interim limit. However, Richburg's Title V air permit uses a 24-hour block average for the interim limit. On November 29, 2017, Richburg experienced a spike in water pressure which was caused by a pipe failure from the city water supply to Richburg. This resulted in the shutdown of the PD and the existing semi-dry scrubber for a total of 6 hours. Richburg was not able to meet the 30 lb./hr. limit based on a 24-hour block average for that day. Pursuant to Paragraphs 64 and 88 of the CD, Guardian provided the required 10-day notification of a potential CD violation with a claim for Force Majeure/Malfunction on December 8, 2017 and submitted additional information to support its Force Majeure/Malfunction claim on January 5, 2018, within 30 days of the event as required by CD. Guardian stated in the submittal that this event qualifies as a Malfunction as defined under the CD. On February 6, 2018, Guardian received EPA's concurrence that the event qualifies as a Malfunction under the terms of the CD.

DeWitt Notice of Force Majeure

On June 23, 2017, Guardian filed a notice a Force Majeure event, at the DeWitt Facility. The facility commenced a CTR on March 2, 2017. In accordance with the Section IV requirements, the facility installed an SCR, DS and PD as part of this project. Furnace Startup began on May 11, 2017. On June 2, 2017, the facility began pulling glass and was preparing to begin the Control Device Startup once the operating inlet temperature of the DS reached its operational range on a consistent basis. However, on June 3, 2017, an explosion and fire occurred at the DeWitt Facility involving the natural gas piping that supplied gas to the furnace. The result involved significant repair to the Furnace and the building around the Furnace and caused the cessation of operations until October 17, 2017, when Furnace Startup began again.

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DeWitt Force Majeure and Malfunction for Control Devices Operation

On December 14, 2017, Guardian filed a 10-day notification for potential delay of Control Devices operational issue. The Control Devices were installed as part of the Cold Tank Repair. Guardian has claimed a Force Majeure and Malfunction. Guardian began operating the Control Devices on November 15, 2017, and the Control Devices Startup period ended on December 15, 2017. During the Control Devices Startup period, Guardian experienced major commissioning issues which were causing the failure of the PD to operate as required. Accordingly, Guardian notified EPA that the DeWitt Facility would not be able to operate the pollution controls for NOx, SO_2 and PM reliably until a full repair will be conducted in mid-2018.

Kingsburg Facility Stack Flow Meter Breakdown

On November 5, 2017, the stack flow meter at the Kingsburg Facility broke down suddenly. The efforts to repair it were not successful and the flow meter had to be replaced. A used stack flow meter was located and shipped to the facility on November 10, 2017. The flow meter was fully commissioned on November 16, 2017 and passed RATA on November 17, 2017 and 7-day drift test on November 23, 2017. The facility was without a certified flow meter for a total of 309 hours and therefore, was not able to calculate the SO_2 mass emission rate for that period. The SO_2 lb./hr. CEMS uptime for the fourth quarter of 2017 was less than 95%. The SO_2 lb./hr. during this period was not included in the emission reported in accordance with the CD requirements outlined in the following.

Paragraph 27states "*Where the Consent Decree requires the use of CEMS to determine compliance with an emission rate (i.e., pounds per Ton, pounds per Day, or Tons per year), the data acquisition and handling system for the CEMS shall convert the ppm values into pounds per hour values using an O_2 CEMS or a flow monitor installed, calibrated, certified, maintained, and operated in accordance with 40 C.F.R. § 60.13, 40 C.F.R. Part 60, Appendix B (Performance Specification 2 or 6, as applicable) and 40 C.F.R. Part 60, Appendix F (Quality Assurance Procedures)*".

According to 60.13(h)(2)(vi):

(vi) Except as provided under paragraph (h)(2)(vii) of this section, data recorded during periods of continuous monitoring system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.

Paragraph 43 of Section IV - Compliance with the H_2SO_4 emission limits using EPA CTM 13A, or 13B

Paragraph 23 required that compliance with the H_2SO_4 emission limits be demonstrated through annual stack tests and using EPA Conditional Test Method CTM 13A or B. The amended Paragraph 23 filed on October 11, 2017, adds CTM 13 to the approved test methods. Guardian demonstrated compliance with the limit at a minimum with CTM 13 method at all applicable facilities in this reporting period.

5. ***A summary of all permitting activity pertaining to compliance with the Consent Decree and the status of any necessary Permit applications;***

Floreffe Facility Notice of Operating Permit Termination County of Allegheny, November 23, 2015

Paragraph 55 and 56 Compliance:

- The Carleton Line 2 Facility submitted a Permit to Install (PTI) application on July 25 to the Michigan Department of Environmental Quality (MDEQ), 2014 and received an approval of Permit to install 105-14 Control Devices, CEMS October 16, 2014
- The Carleton Line 2 Facility submitted a petition request to the MDEQ to merge PTI into Title V on February 15, 2015 and received the merged Title V permit on May 5, 2015 (MI-ROP-B1877-2014a)

- The Corsicana Facility submitted a Pollution Control Project (PCP) Standard Permit Application on November 10, 2014 to install low NOx burners which were installed on November 10, 2015.
- The Corsicana Facility submitted an amendment to its Operating Permit to install CEMS at the Furnace stack on April 4, 2016. A NOx CEMS was installed and passed the initial Relative Accuracy Test Audit (RATA) on December 9, 2015.
- The Carleton Line 2 Facility submitted a Letter of Notice for Carleton Line 2 Facility CTR on January 16, 2016.
- The DeWitt Facility submitted an Air Construction Permit to Install application on January 12, 2016 and received the IDNR Permit number 95-A-154-P4 issued July 28, 2016 incorporating the CD requirements and approving an increase in production with the CTR project.
- The Kingsburg Facility submitted an Authority to Construct (ATC) permit application to install inlet CEMS on August 27, 2015 and received the ATC on November 18, 2015
- Kingsburg Facility submitted an ATC permit application to incorporate all CD requirements into the Title V permit on November 20, 2016
- The Carleton Line 2 Facility CD Amendment to Title V permit submitted to MDEQ on Dec 27, 2016
- The Corsicana Facility proposed an interim NOx emission limits on February 28, 2017. The facility has continuously complied with the proposed 30-day Rolling Average Emissions Rate since then.
- The Geneva Facility received a Title V Significant Modification permit on April 11, 2017 for a CTR scheduled in 2018 and approving an increase in Furnace capacity with installation of Emission Control in 2017. It also incorporated all the CD requirements in the Title V permit.
- The Carleton Line 2 Facility performed a PSD applicability analysis including an air dispersion modeling in August 2017 to incorporate the CD limits in its Title V permit.
- The Richburg Facility incorporated all the applicable CD requirements in its renewal of Title V permit issued on May 11, 2017 and effective on January 1, 2018.

6. ***For each Furnace that is subject to a final emissions limit in Section IV, a record of that Furnace's daily 30-day Rolling Average Removal Efficiency or 30-day Rolling Average Rate for NO_X and SO_2;***

   This requirement is only applicable to Carleton Line 2, Kingsburg and Geneva Facilities for this reporting period. Table 1 of Appendix A provides the requested information.

7. ***The actual monthly emissions of NO_X and SO_2, from each Furnace at the Covered Facilities measured using CEMS, and for PM and H_2SO_4 emissions at the Covered Facilities as estimated based on the most recent source/stack test(s);***

   This requirement is applicable to all Covered Facilities. Table 2 of Appendix A provides the requested information.

8. ***The results of any source/stack testing performed at any Furnace at a Covered Facility;***

This requirement is applicable to all Covered Facilities. Table 3 of Appendix A provides the stack testing results.

9. ***Monthly production of glass;***

This requirement is applicable to all Covered Facilities. Table 4 of Appendix A provides the requested information

10. ***A list of Days excluded from the 30-day Rolling Average Emission Rate and 30-day Rolling Average NO_X Removal Efficiency due to an Abnormally Low Production Rate Day, Idling, Furnace Startup, Malfunction, or Maintenance;***

This requirement is only applicable to Carleton Line 2, Kingsburg and Geneva Facilities for this reporting period. Table 5 of Appendix A provides the requested information. As it was discussed in the paragraph 4 above, Kingsburg Facility was not able to calculate the SO_2 mass emission rate from November 5th to November 17th due to its stack flowmeter breakdown.

11. ***The pounds of NO_X or SO_2 emitted from each Day excluded from the 30-day Rolling Averages (where applicable);***

This requirement is only applicable to Kingsburg and Geneva Facilities for this reporting period. Carleton Line 2 did not exclude any Day from the 30-day Rolling Averages. Table 6 of Appendix A provides the requested information.

12. ***Payment of any civil or stipulated penalties;***

Copy of the payments are included in Appendix B

13. ***Any other information required to be recorded in Paragraphs 41-43.***

Table 7 in Appendix C contains the information required to be recorded in Paragraph 41 except the 30-day Rolling Average emissions which are already provided in response to item 6 above. Table 8 in Appendix C contains required information in CD Paragraph 42. The required data under Paragraph 43 for the DeWitt Facility CTR completed during this reporting period are included in Table 9 and Table 10 of Appendix C.

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Each annual report shall also include a description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If Guardian violates, or has reason to believe that it may have violated, any requirement of this Consent Decree, Guardian shall notify the United States and applicable Plaintiff-Intervenor of such violation and its likely duration, in writing and by telephone, fax, or email, within ten (10) Days of the Day Guardian first became aware of the violation or potential violation. This notice shall provide an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Guardian shall explain this in the report. Guardian shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day Guardian first becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Guardian of its obligation to provide the notice required by Section XI (Force Majeure) of this Consent Decree.

During this reporting period, one potential non-compliance with the requirements of the CD occurred:

1. Paragraph 43.c as verbally agreed and formally amended on October 10, 2017, requires Guardian to keep records during Furnace Startup of the excess oxygen percentage (as measured and recorded using a probe and a portable analyzer in the crown of each Furnace regenerator at least once per shift). On May 27, 2017, Guardian did not record the excess oxygen percentage during the first shift. On January 26, 2018, during the process of finalizing the annual progress report required under Paragraph 62 of the Consent Decree, Guardian corporate and legal personnel were made aware of the missed recordkeeping at the DeWitt Facility. Based on further review of the data, the oxygen reading for this one shift is the only data that appears to be missing. Also, all data required for the subsequent Furnace Startup, after the explosion and fire, were properly recorded. On February 2, 2017, in accordance with Paragraph 64 Guardian submitted a written notification of a potential violation.

During this reporting period, two other events occurred for which Guardian claimed Force Majeure and is awaiting EPA's concurrence.

a. On June 23, 2017, Guardian filed a notice a Force Majeure event, for the DeWitt Facility. The DeWitt Facility commenced a CTR on March 2, 2017. In accordance with the Section IV requirements, the facility installed an SCR, DS and PD as part of this project. Furnace Startup began on May 11, 2017. On June 2, 2017, the facility began pulling glass and was preparing to begin the Control Device Startup once the operating inlet

temperature of the DS reached its operational range on a consistent basis. However, on June 3, 2017, an explosion and fire occurred at the DeWitt Facility involving the natural gas piping that supplied gas to the Furnace. The result involved significant repair to the Furnace and the building around the Furnace and caused the cessation of operations until October 17, 2017, when Furnace Startup began again.

b. On December 14, 2017, Guardian filed a 10-day Force Majeure notification and on January 11, 2018, Guardian filed the 30-day supplemental Force Majeure notification for potential delay of Control Devices operation for the DeWitt Facility. The Control Devices were installed as part of the CTR. Guardian began operating the Control Devices on November 15, 2017, and the Control Devices Startup period ended on December 15, 2017. During the Control Device Startup period, Guardian's vendor of the controls, including the PD used to control PM. [redacted] experienced major commissioning issues which were causing the failure of the PD to operate as required. The PD was sparking at a higher than normal rate and did not reach the necessary voltage and amperage for the system. Furthermore, because the pollution controls at the DeWitt Facility for PM (PD), NOx (SCR) and SO2 and H2SO4 (DS) are inter-related, when the PD is not functioning properly, the other controls cannot be run safely or effectively. That is because, if the PD is not functioning, the lime dousing used for SO2 and H2SO4 reduction would need to be shut down due to the inability to remove particulate and the SCR would have to be bypassed because the additional particulate and SO2 would cause the catalyst to become plugged and deactivated.

   Over the past several weeks, Guardian and [redacted] have worked diligently to determine the cause of the PD's malfunction. On multiple occasions, physical adjustments were made, including, but not limited to, relocating metal mounts to stabilize the internal assembly of the PD, removing and/or replacing electrodes, straightening portions of the metal frame that had become misshapen, and removing and/or replacing certain welds and expansion joints that were believed to be preventing sufficient thermal expansion. As a cumulative result of these efforts, since December 15 Guardian, working with [redacted], has been able to operate the PD in such a manner to cause sufficient PM reduction such that both the SCR and DS can operate. After completing the required CEMS certification, the data collected to date indicate that DeWitt Facility is in compliance with the 30-day rolling average emission limits for NOx and SO2; however, the current operating mode may not be sustainable over the long term since the root cause of the failure has yet to be definitely determined, and the PD is still operating well below its specified voltage and amperage requirements. As a result of the uncertainty of the current operating mode, DeWitt Facility is going to replace the internal structure of the PD, which will be scheduled to occur in mid-2018.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

2/28/2018

John Buckner
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Date